MILLENNIUM CHALLENGE CORPORATION
UNITED STATES OF AMERICA

ARMENIA

MCC Learning from

"IMPACT EVALUATION OF THE IRRIGATION INFRASTRUCTURE ACTIVITY IN ARMENIA"

MATHEMATICA, AUGUST 2016

MCC has identified the following programmatic and evaluation lessons based on the Impact Evaluation of the Irrigation Infrastructure Activity in Armenia.

PROGRAMMATIC LESSONS

- *Root cause analysis is critical to successful project design, especially where behavior change is integral to the program logic.* The Irrigated Agriculture Project did not result in the increases in high-value crops that were projected during project design. This could either be because the root causes of farmers' failure to increase production of high-value crops were misdiagnosed (i.e. the problem was not water, training or credit) or the project as implemented did not adequately address those causes (i.e. improvements to the irrigation system were not sufficient to actually increase access to water and increases in irrigated land or training of only a subset of farmers receiving improved irrigation was insufficient). It's important that the program logic developed during project design be based on evidence about what the root causes of a problem are and then implementation should align with that program logic.

  MCC has addressed this lesson through MCC's revised guidance for compact development, which requires a problem diagnosis phase immediately after the constraints analysis. During this phase, the key root causes of the binding constraints are analyzed in order to ensure sufficient understanding of the problems that the project will be designed to address. The next phase of the development process includes building strong project logics for the proposed compact program.

- *Supporting the development of new institutions, such as Water User Associations, is inherently difficult and can be a long-term undertaking, so MCC projects should account for the five year timeline and anticipate necessary follow-on activities.* While MCC's intervention improved WUA performance during the Compact, WUAs did not continue to improve their cost-recovery after the Compact ended. The Compact did not put in place the necessary environment for WUAs to continue to improve and become self-sufficient. Future programs should focus on building the right environment for sustainability from the beginning by clearly defining reasonable achievements within a five-year timeframe and planning for what will need to occur after.

- *During a project re-scoping, the program logic, economic analysis, potential beneficiaries, and evaluation plan should be re-assessed in a cohesive way by a coordinated project team.* The Irrigation Infrastructure Activity was re-scoped; however, the other complementary activities were not assessed in the same way at the same time. This contributed to a disjointed project during implementation and may be one of the reasons for the lack of impact. In addition, the re-scoping economic analysis, on which the design of the evaluation was based, may have been overly optimistic about the behavioral changes that would occur from the project. An integrated, cross-sectoral review of the economic analysis may have resulted in more realistic assumptions of behavioral changes.

  MCC has addressed this lesson in MCC's policy on compact modifications, which requires that the team economist review any potential change in scope to assess its impact on the expected economic benefits and beneficiaries.

- *Better water monitoring tools could help Water User Associations while also providing better measurement of outcomes.* Improved water delivery and reduced losses were fundamental expected outcomes of the Irrigation Infrastructure Activity, but the existing data have not been validated, and there are not accurate measures of water delivery to farmers. This makes it difficult to know whether water availability has actually improved for individual farmers. Creating the means for WUAs to more precisely measure water delivery would also potentially help them manage their resources more effectively.

EVALUATION LESSONS

- *An irrigation project where demand for the intervention exceeds available funding, can provide an opportunity for random assignment (or other allocation mechanisms that are fair, efficient and informative) that can improve the level of rigor of evaluation results.* In cases like this where demand for irrigation outstrips funding, a well-executed randomized controlled trial of improvements like the tertiary canals could be structured so that impacts can be rigorously evaluated for subgroups of farmers that receive different types of infrastructure rehabilitation.

- *Sector-specific technical capabilities should be required on the evaluation team when needed to assess key intermediate outcomes.* The evaluation team did not include irrigation infrastructure expertise and therefore, could not assess the actual state of the irrigation system in 2013. The post-project state of the infrastructure is an important aspect of assessing project results. Infrastructure evaluations should be designed to include a technical assessment of the improved infrastructure to ensure that it is functioning as envisioned after the compact.

- *Evaluation questions are based on the program logic and must be designed carefully from the beginning to understand the scope and limitations of the evaluation.* Given that the Irrigated Agriculture Project was not designed and implemented as a package of coordinated interventions for a targeted group of beneficiaries, MCC could not design an evaluation of the overall Project. Even though the individual Activity evaluations were informative, the lack of coordination between Activities limited MCC's ability to report on the overall impact of the Project. In the future, MCC should work with all stakeholders to

understand the program logic, how the program will be implemented and clarify what the evaluation will be able to answer and not answer from the beginning. In addition, MCC should design evaluations to be able to explain "why" if the expected impacts do not materialize.

MCC has addressed this lesson as evaluation scopes of work are including more technical sector expertise on the evaluation teams. In addition, many evaluations are being designed to answer "why" when expected results to do not materialize.